



Evaluation of Soil Salinity Amelioration Technologies in Timpaki, Crete

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Salinization is a soil threat that adversely affects ecosystem services and diminishes soil functions in many arid and semi-arid regions. Soil salinity management depends on a range of factors, and can be complex expensive and time demanding. Besides taking no action, possible management strategies include amelioration and adaptation measures. The WOCAT Technologies Questionnaire is a standardized methodology for monitoring, evaluating and documenting sustainable land management practices through interaction with the stakeholders. Here we use WOCAT for the systematic analysis and evaluation of soil salinization amelioration measures, for the RECARE project Case Study in Greece, the Timpaki basin, a semi-arid region in south-central Crete where the main land use is horticulture in greenhouses irrigated by groundwater. Excessive groundwater abstractions have resulted in a drop of the groundwater level in the coastal part of the aquifer, thus leading to seawater intrusion and in turn to soil salinization due to irrigation with brackish water. Amelioration technologies that have already been applied in the case study by the stakeholders are examined and classified depending on the function they promote and/or improve. The documented technologies are evaluated for their impacts on ecosystem services, cost and input requirements. Preliminary results show that technologies which promote maintaining existing crop types while enhancing productivity and decreasing soil salinity such as composting, mulching, rain water harvesting and seed bioprimering are preferred by the stakeholders. Further work will include result validation using qualitative approaches.

Keywords: soil salinity; salinization; evaluation of soil salinization amelioration techniques; WOCAT; RECARE FP7 project; Timpaki Crete